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**AMENDMENTS TO THE CLAIMS****WE CLAIM:**

- 5 1. (currently amended) A method of cascaded policing of a service, comprising a first and a second priority class, for a two-tier rate guarantee comprising the steps of:
- (a) policing the traffic of the first priority class (first class traffic) service at a service rate guarantee based upon a leaky bucket cascaded policer  
10 mechanism, wherein the leaky bucket cascaded policer has a finite first traffic capacity for said service first priority class, and wherein first class traffic below the first traffic capacity is a conforming first class traffic the finite traffic capacity comprising a first class traffic capacity having a first class rate guarantee and a second class traffic capacity having a second class rate  
15 guarantee, which is lower than the first class rate guarantee;
- (b) policing the first class traffic of the second priority class (second class traffic) capacity at the first class rate guarantee based upon a leaky bucket cascaded policer mechanism, wherein the said leaky bucket cascaded policer has a composite traffic capacity for said second priority class, said  
20 composite traffic capacity being composed of a second traffic capacity plus the first traffic capacity diminished by the rate of the conforming first class traffic having a traffic capacity, which is equal to the first class traffic capacity;
- (c) policing the second class traffic capacity at the second class rate guarantee based upon a leaky bucket mechanism, said leaky bucket having a traffic  
25 capacity which is equal to the second class traffic capacity; and
- (d) if not all of the capacity of the leaky bucket of the first class traffic is being used,  
(i) storing the second class traffic capacity, which is not being policed in step (c) into said leaky bucket, and  
30 (ii)(i) -policing the traffic capacity in said leaky bucket at an aggregate rate of the first class rate guarantee and the second class rate guarantee.

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2. (canceled).

3. (currently amended) The method according to claim 1, wherein the second  
5 class traffic capacity ~~being marked is defined as conforming~~ second class traffic  
if it is below the rate allowed by the composite traffic capacity.

~~aggregate rate of the first class rate guarantee and the second class rate guarantee  
and non-conforming if found to exceed the aggregate rate of the first class rate  
guarantee and the second class rate guarantee.~~

10 4. (currently amended) The method according to claim 1, wherein the rate  
guarantee includes a steps (b) and (c) comprise policing at a traffic class rate  
guarantee and a traffic class burst tolerance guarantee.

15 5. (currently amended) A method of cascaded policing of a service for a two-tier  
rate guarantee comprising the steps of:

(e) policing the service at a service rate guarantee based upon a leaky  
bucketcascaded policer mechanism, wherein the leaky bucketcascaded  
policer has a finite traffic capacity for said service, the finite traffic capacity  
20 comprises a plurality of classes of traffic capacities having their respective  
plurality of traffic classes rate guarantees arranged in a descending order of  
priorities;

(f) policing at least one of the plurality of classes of traffic capacities at its  
respective traffic class rate guarantee based upon a leaky bucketcascaded  
25 policer mechanism, said leaky bucketcascaded policer has a traffic capacity  
which is equal to the at least one of the plurality of classes of traffic  
capacities;

(g) policing each of the remaining plurality of classes of traffic capacities at its  
respective traffic class rate guarantee based upon cascaded leaky  
30 bucketspolicer mechanism, each of the leaky bucketcascaded policer has a  
traffic capacity which is equal to each of the remaining plurality of classes of  
traffic capacities; and

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(h) if not all of the capacity of the ~~leaky bucket~~cascaded policer of said at least one of the plurality of classes of traffic capacities is being used,

(v) storing one or more of the remaining classes of traffic capacities of said plurality of classes of traffic capacities, which have lower traffic classes rate guarantees and have not being policed in step (g), into said ~~leaky bucket~~cascaded policer, and

(vi) policing the classes of traffic capacities in said ~~leaky bucket~~cascaded policer at an aggregate rate of the plurality of traffic classes rate guarantees.

6. (previously presented) The method according to claim 5, wherein the at least one of the plurality of classes of traffic capacities is marked as conforming if allowed by its respective traffic class rate guarantee and non-conforming if found to exceed its respective traffic class rate guarantee.

7. (previously presented) The method according to claim 5, wherein each of the remaining plurality of classes of traffic capacities is marked as conforming if allowed by the aggregate rate of the plurality of traffic classes rate guarantees and non-conforming if found to exceed the aggregate rate of the plurality of traffic classes rate guarantees.

8. (previously presented) A method of cascaded policing of a service for a two-tier rate guarantee comprising the steps of:

(i) policing the service at a service rate guarantee based upon a leaky bucket mechanism, wherein the leaky bucket has a finite traffic capacity for said service, the finite traffic capacity comprises a plurality of  $N$  classes of traffic capacities,  $C_i$ ,  $i=1, 2, \dots, N$  and  $N>2$ , having their respective plurality of traffic classes rate guarantees,  $R_i$ ,  $i=1, 2, \dots, N$  and  $N>2$  arranged in a descending order of priorities;

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- (j) policing the  $C_i$  traffic capacity at its respective traffic class rate guarantee  $R_i$ , based upon a leaky bucket mechanism, said leaky bucket has a traffic capacity, which is equal to the  $C_i$  traffic capacity;
- (k) policing each of the  $C_1, C_2, \dots, C_{i-1}$  traffic capacities at its respective traffic class rate guarantee  $R_1, R_2, \dots, R_{i-1}$  based upon cascaded leaky buckets mechanism, the cascaded leaky buckets having  $C_1, C_2, \dots, C_{i-1}$  traffic capacities; and
- (l) if not all of the capacity of the leaky bucket of the  $C_i$  traffic capacity is being used,
- (x) storing one or more of the  $C_1, C_2, \dots, C_{i-1}$  traffic capacities, which have not being policed in step (k), into said leaky bucket, and
- (xi) policing the traffic capacities in said leaky bucket at an aggregate rate  $RA_i$ , which is  $RA_i \sum_{i=1}^N R_i$ .

159. 9. (currently amended) The method according to claim 8, further comprising the steps of:

- (m) policing the service at a service burst tolerance guarantee based upon a leaky bucket mechanism, wherein the leaky bucket has a finite traffic capacity for said service, the finite traffic capacity comprises a plurality of N classes of traffic capacities,  $C_i, i=1, 2, \dots, N$  and  $N>2$ , having their respective plurality of burst tolerance guarantees,  $BT_i, i=1, 2, \dots, N$  and  $N>2$ ;
- (n) policing the  $C_i$  traffic capacity at its respective burst tolerance guarantee  $BT_i$ , based upon a leaky bucket mechanism, said leaky bucket has a traffic capacity, which is equal to the  $C_i$  traffic capacity;
- (p) policing each of the  $C_1, C_2, \dots, C_{i-1}$ , traffic capacities at its respective burst tolerance guarantee  $BT_1, BT_2, \dots, BT_{i-1}$  based upon cascaded a leaky

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buckets mechanism, the cascaded leaky buckets having  $C_1, C_2, \dots, C_{i-1}$  traffic capacities; and

(q) if not all of the capacity of the leaky bucket of the  $C_i$  traffic capacity is being used,

5 (a) storing one or more of the  $C_1, C_2, \dots, C_{i-1}$ , traffic capacities, which is not being policed in step (p), into said leaky bucket, and

(b) policing the traffic capacities of said leaky bucket at an aggregate burst tolerance guarantee  $BA_i$ , which is  $BA_i = \sum_{i=1}^N BT_i$ .

10 10. (canceled)

11. (canceled)

12. (canceled)

13. (canceled)

14. (canceled)

15 15. (canceled)

16. (canceled)

17. (currently amended) An apparatus for cascaded policing of a service, comprising a first and a second priority class, for a two-tier rate guarantee, comprising:

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(r) a policer, policing the traffic of the first priority class (first class traffic) service at a service-rate guarantee based upon a cascaded policer mechanism, wherein the cascaded policer has a, ~~the policer having a buffer storage for a finite~~first traffic capacity for said ~~service~~first priority class, and wherein first class traffic below the first traffic capacity is a conforming first class traffic, ~~the finite traffic capacity comprising a first class traffic capacity having a first class rate guarantee and a second class traffic capacity having a second class rate guarantee, which is lower than the first class rate guarantee;~~

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- (s) a policer, policing the ~~first class traffic of the second priority class~~  
~~(second class traffic) capacity at the first class rate guarantee based upon a~~  
~~cascaded policer mechanism, wherein the cascaded policer has a composite~~  
~~traffic capacity for said second priority class, said composite traffic capacity~~  
5 ~~being composed of a second traffic capacity plus the first traffic capacity~~  
~~diminished by the rate of the conforming first class traffic having a buffer~~  
~~storage for a traffic capacity, which is equal to the first class traffic capacity;~~
- (t) ~~a policer, policing the second class traffic capacity at the second class rate~~  
~~guarantee, the policer having a buffer storage for a traffic capacity which is~~  
10 ~~equal to the second class traffic capacity; and~~
- (u) ~~a policer, policing the second class traffic capacity, which is not being policed~~  
~~in step (t) at an aggregate rate of the first class rate guarantee and the~~  
~~second class rate guarantee, if not all of the capacity of the buffer storage of~~  
~~the first class traffic has been used.~~

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18. (original) The apparatus as described in claim 17, wherein the policer comprises means for marking the first traffic capacity as conforming if allowed by the first class rate guarantee and non-conforming if found to exceed the first class rate guarantee.

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19. (original) The apparatus as described in claim 17, wherein the policer comprises means for marking the second traffic capacity as conforming if allowed by an aggregate rate of the first class rate guarantee and the second class rate guarantee and non-conforming if found to exceed the aggregate rate

25 of the first class rate guarantee and the second class rate guarantee.

20. (original) The method as described in claim 8, wherein each of the  $C_i$ ,  $i = 1, 2, \dots, N$  and  $N > 2$ , traffic capacities being marked as conforming if allowed by its respective traffic class rate guarantee  $R_i$ ,  $i = 1, 2, \dots, N$  and  $N > 2$  and non-

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conforming if found to exceed its respective traffic class rate guarantee,  $R_i$ ,  $i=1, 2, \dots, N$  and  $N>2$ .

21. (original) The method as described in claim 8, wherein each of the  $C_1, C_2, \dots,$   
5  $C_{i-1}$ , traffic capacities being marked as conforming if allowed by the aggregate

rate  $RA_i$ , which is  $RA_i = \sum_{i=1}^N Ri$  and non-conforming if found to exceed the

aggregate rate  $RA_i$ , which is  $RA_i = \sum_{i=1}^N Ri$ .

22. (previously presented) The method as described in claim 1, wherein the step (a)  
10 comprises policing at a service rate guarantee and a service burst tolerance  
guarantee.

23. (previously presented) The method as described in claim 5, wherein the steps (f)  
and (g) comprise policing at a traffic class rate guarantee and a traffic class burst  
15 tolerance guarantee.

24. (previously presented) The method as described in claim 5, wherein the step (e)  
comprises policing at a service rate guarantee and a service burst tolerance  
20 guarantee.

25. (previously presented) The apparatus as described in claim 17, wherein the  
20 policer is a leaky bucket mechanism.

26. (previously presented) The apparatus as described in claim 17, wherein the  
25 policer comprises a buffer storage for storing the first class traffic capacity and  
another buffer storage for storing the second class traffic capacity.

27. (currently amended) The apparatus as described in claim 17, wherein the  
steps (s) and (t) comprises providing means for policing at a traffic class rate  
30 guarantee and a traffic class burst tolerance guarantee.

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28. (currently amended) The apparatus as described in claim 17, wherein the step (r) comprises providing means for policing at a service rate guarantee and a service burst tolerance guarantee.

5 29. (canceled)

30. (canceled)

31. (canceled)

10 32. (canceled)

33. (canceled)

34. (canceled)

35. (canceled)

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